Docket No.: M4065.0392/P392 Application No.: 09/773,522

Amendment dated December 19, 2003

Reply to Office action dated September 4, 2003

Amendments To The Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:** 

Claims 1-34 (Canceled).

35. (Currently amended) A method of fabricating a flip chip semiconductor die

depositing solder material, said method comprising the steps of:

introducing a first solder component into at least a first solder conduit of a print

head, wherein said first solder conduit has first and second openings; and

pressurizing gas in a chamber of said print head which is in fluid communication

with at least said first opening, wherein said first solder component introduced in said first

solder conduit is not introduced into said chamber, said pressurized gas flowing to said first

solder conduit and causing said first solder component to be ejected from said second

opening, thereby depositing a said first solder material component on each of a plurality of

a connection site sites, wherein the diameter of each said deposited solder material is about

10 microns or less on a receiving element.

36. (Currently amended) The method of claim 35, wherein said deposition of

solder material is accomplished with a single further comprising moving said print head

relative to said receiving element and depositing said first solder component at a plurality of

connection sites on said receiving element.

Amendment dated December 19, 2003

Reply to Office action dated September 4, 2003

37. (Currently amended) The method of claim 35, wherein said deposition further

comprises:

depositing a first element from a print head moving said print head relative to said

receiving element; and

depositing at least a second element solder component on said connection site on

said receiving element from a print head second solder conduit of said print head, wherein

the combination of the elements first and second solder components mix at said

connection site on said receiving element to form forms the a solder material.

38. (Currently amended) The method of claim 35, wherein said deposition

comprises depositing the solder material from two or more print heads said solder

component is a solder material.

39. (Currently amended) The method of claim 35, wherein said deposition is

accomplished with further comprises:

moving at least a second print head relative to said receiving element; and

depositing a second solder component on said connection site on said receiving

element from at least one solder conduit of a plurality of said second print heads head,

wherein the first and second solder components on said connection site mix to form a

solder material.

Docket No.: M4065.0392/P392 Application No.: 09/773,522

Amendment dated December 19, 2003

Reply to Office action dated September 4, 2003

40. (Currently amended) The method of claim 35, wherein said connection site is a bond pad and said method further comprising pre-cleaning the bond pads pad prior to said deposition of the depositing said first solder material component.

- 41. (Currently amended) The method of claim 40, further comprising depositing an adhesive metal between said pre-cleaning and said depositing of the first solder material component.
- 42. (Currently amended) The method of claim 41, further comprising adding a passivation material onto the deposited first solder material component.
- 43. (Currently amended) The method of claim 35, wherein said deposition comprises depositing the first solder material component multiple times at a single location.
- 44. (Currently amended) The method of claim 36, wherein a pitch between respective ones of two adjacent ones of said plurality of connection sites on which said deposited first solder material component is deposited is less than about 100 microns.
- 45. (Currently amended) The method of claim 44, wherein a pitch between respective ones of two adjacent ones of said plurality of connection sites on which said deposited first solder material component is deposited is less than about 25 microns.

Amendment dated December 19, 2003

Reply to Office action dated September 4, 2003

46. (New) The method of claim 35, wherein said first solder component has a

diameter of about 10 microns or less as deposited on said connection site on said receiving

element.

47. (New) The method of claim 35, wherein said introducing and pressurizing steps

are repeated on said receiving element such that a diameter of said solder component is

greater than 10 microns as deposited on said connection site on said receiving element.

48. (New) The method of claim 38, wherein said introducing and pressurizing steps

are repeated on said receiving element such that a diameter of said solder material is greater

than 10 microns as deposited on said connection site on said receiving element.

49. (New) A method of depositing solder material, said method comprising the

steps of:

introducing a solder material into a solder conduit of a print head, wherein said

conduit has at least first and second openings; and

pressurizing gas in a chamber of said print head which is in fluid communication

with at least said first opening of said conduit, wherein said solder material introduced in

said solder conduit is not introduced into said chamber, said pressurized gas flowing to said

solder conduit and causing said solder material to be ejected from said second opening of

said solder conduit; and

Docket No.: M4065.0392/P392

Application No.: 09/773,522

Amendment dated December 19, 2003

Reply to Office action dated September 4, 2003

depositing said solder material on a plurality of connection sites on a receiving element.

50. (New) The method of claim 49, wherein said solder material has a diameter of

about 10 microns or less as deposited on said connection site on said receiving element.

51. (New) The method of claim 50, wherein said print head is passed over said

receiving element more than once such that said solder material has a diameter greater than

10 microns on said connection sites on said receiving element.

52. (New) The method of claim 49, wherein said print head moves with respect to

said receiving element to deposit said solder material at the plurality of connection sites on

said receiving element.

53. (New) A method of depositing solder material, said method comprising the

steps of:

introducing a first solder component into a first solder conduit of a print head,

wherein said first solder conduit has at least first and second openings;

introducing at least a second solder component into a second solder conduit of said

print head, wherein said second solder conduit has at least first and second openings; and

pressurizing gas in at least first and second chambers of said print head which are in

fluid communication with said first openings of said first and second solder conduits,

Amendment dated December 19, 2003

Reply to Office action dated September 4, 2003

respectively, wherein said first and second solder components introduced in said first and second solder conduits, respectively, are not introduced into said first and second chambers, said pressurized gas flowing to said first and second solder conduits and causing said first and second solder components to be ejected from said second openings of said first and second solder conduits, thereby respectively depositing said first and second solder components on at least a first and a second connection site on a receiving element.

- 54. (New) The method of claim 53, wherein said print head moves with respect to said receiving element to deposit said second solder component on said first connection site.
- 55. (New) The method of claim 54, wherein said first and second solder components mix at said first connection site to form a solder material.
- 56. (New) The method of claim 53, wherein said first and second solder components are solder materials.
- 57. (New) The method of claim 53, wherein said solder components have a diameter of about 10 microns or less on said connection sites on said receiving element.
- 58. (New) The method of claim 57, wherein said print head is passed over said receiving element more than once such that a diameter of said first and second solder components is greater than 10 microns on said connection sites on said receiving element.

Reply to Office action dated September 4, 2003

59. (New) A method of depositing solder material, said method comprising the steps of:

introducing a first solder component into a first solder conduit of a first print head, wherein said first solder conduit has at least first and second openings;

introducing at least a second solder component into at least a second solder conduit of a second print head, wherein said second solder conduit has at least first and second openings;

pressurizing gas in a first chamber of said first print head which is in fluid communication with said first opening of said first solder conduit, wherein said first solder component introduced in said first solder conduit is not introduced into said first chamber, said pressurized gas flowing to said first solder conduit and causing said first solder component to be ejected from said second opening of said first solder conduit, deposit said first solder component on a connection site on a receiving element; and

pressurizing gas in at least a second chamber of said second print head which is in fluid communication with said first opening of said second solder conduit, wherein said second solder component introduced in said second solder conduit is not introduced into said second chamber, said pressurized gas flowing to said second solder conduit and causing said second solder component to be ejected from said second opening of said second solder conduit, to deposit said second solder component on said connection site on said receiving element.

Amendment dated December 19, 2003

Reply to Office action dated September 4, 2003

60. (New) The method of claim 59, wherein said first and second print heads move

with respect to said receiving element, depositing said solder components onto a plurality

of connection sites on said receiving element.

61. (New) The method of claim 60, wherein said first print head passes over said

connection sites and deposits said first solder component before said second print head

passes over said connection sites and deposits said second solder component.

62. (New) The method of claim 61, wherein said first and second solder

components mix at said connection sites to form a solder material.

63. (New) The method of claim 60, wherein said first and second solder

components are simultaneously deposited at different connection sites on said receiving

element.

64. (New) The method of claim 59, wherein said first and second solder

components are solder materials.

65. (New) The method of claim 59, wherein said solder components have a

diameter of about 10 microns or less on said connection site on said receiving element.

66. (New) A method of depositing solder material, said method comprising the

steps of:

.522 Docket No.: M4065.0392/P392

Application No.: 09/773,522

Amendment dated December 19, 2003

Reply to Office action dated September 4, 2003

introducing a solder component into a plurality of solder conduits of a print head,

wherein said solder conduits have at least first and second openings; and

pressurizing gas in a plurality of chambers of said print head which are in fluid

communication with said first openings of said conduits, wherein said solder component

introduced in said solder conduits is not introduced into said chambers, said pressurized

gas flowing to said solder conduits and causing said solder component to be ejected from

said second openings to deposit said solder component on a plurality of connection sites on

a receiving element.

67. (New) The method of claim 66, wherein the diameter of said deposited solder

components on said connection sites is about 10 microns or less.

68. (New) The method of claim 66, wherein a pitch between two adjacent ones of

said plurality of connection sites on which said solder component is deposited is less than

about 25 microns.

69. (New) The method of claim 66, wherein said print head moves with respect to

said receiving element to deposit said solder component to another plurality of connection

sites on said receiving element.

70. (New) The method of claim 66, further comprising:

passing at least a second print head having a second plurality of solder conduits over

said receiving element;

Amendment dated December 19, 2003

Reply to Office action dated September 4, 2003

introducing at least a second solder component into said second plurality of solder

conduits of said second print head, wherein said second solder conduits have at least first

and second openings; and

pressurizing gas in a plurality of chambers of said second print head which are in

fluid communication of at least said first openings of said conduits, wherein said second

solder component introduced in said second solder conduits is not introduced into said

chambers, said pressurized gas flowing to said second solder conduits and causing said

second solder component to be ejected from said second openings of said second solder

conduits, thereby depositing said second solder component on each of said connection

sites on said receiving element.

71. (New) The method of claim 70, wherein said first and second solder

components mix at said connection sites to form a solder material.